

Predictors of Fear of Childbirth in the Primiparous Women in Ardabil-Iran

NASRIN TATA¹, KHALIL ESMAELPOUR², FAHIMEH SEHHATTI SHAFAEI³, MEHRIAR MOHAMMADI⁴,
NOWRUZ NAJAFZADEH⁵, MOJGAN MIRGHAFOURVAND⁶

ABSTRACT

Introduction: Fear Of Childbirth (FOC) is the main factor leading to elective and emergency cesarean section. FOC and prenatal depression affect the women and fetus health status and it is associated with negative neonatal outcomes during pregnancy.

Aim: To determine the predictors of FOC in pregnant women.

Materials and Methods: This cross-sectional study was carried out on 230 primiparous women between 24th and 30th weeks of pregnancy who referred to 17 urban healthcare centres of Ardabil-Iran. Six centres of 17 urban healthcare centres were randomly selected using a cluster sampling method. A list of the women who met the inclusion criteria and willing to participate in this study was prepared. The socio-demographic questionnaire, Edinburgh Postnatal Depression Scale (EPDS), and Wijma Delivery Expectancy Questionnaire (WDEQ-A) were used to collect data through in-person interviews. The statistical

analyses were performed with the Pearson's correlation test and the general linear model.

Results: The mean (SD) scores of the WDEQ-A and the EPDS were 58.4 (26.1) and 8.9 (5.1), respectively. More than one third of women (38.6%) had high FOC and about one third (34.1%) had moderate FOC. On the base of the Pearson's correlation test, there was a significant correlation between FOC and depression ($p < 0.001$, $r = 0.51$). Moreover, based on the general linear model, the variables of depression, sufficiency of family income and non-male fetal gender were predictors of FOC and they explained 28.5% of the variance in childbirth fear.

Conclusion: The present results showed that the pregnancy depression correlated with FOC. Therefore, identifying and treating depressed pregnant women can decrease FOC and its complication on the women and neonates. It may be also effective in reducing unnecessary cesarean sections.

Keywords: Cesarean section, Depression, Prenatal, Primiparity

INTRODUCTION

Pregnancy, labour and parenting are important processes during a woman life. Childbirth in a family influences women thinking and feeling about their life situations and their role during motherhood [1]. Childbirth may be a potentially life-threatening event for mother and neonate in the developing country, but in developed countries, childbirth is a positive life event with minimal complication for mother and fetus [2]. FOC is frequent among pregnant women. It seems that about 80% of pregnant women may experience different levels of childbirth fear [3] and 6-13% of them experience severe FOC [4]. Negative factors associated with FOC are sleep disturbance [5], prenatal depression [6], increased using of prenatal healthcare [7], and maternal request for elective cesarean section. Indeed, they demand pain relief with epidural anaesthesia and have negative childbirth experiences. Women with FOC may develop postpartum depression and it may lead to lower rates of breastfeeding [8-10]. In some studies demanding for cesarean section were due to FOC among primiparous women [11,12].

The highest rate of cesarean section is the common health problem in the world. According to the World Health Organisation (WHO) study, between 2000 and 2013, the cesarean section rate increased from 35% to 56.1% in Iran [13]. Recently, the rate of cesarean section in Iran has been estimated about 48% [14]. Depression is a common complication during pregnancy and postpartum period. More than 70% of women express symptoms of depression during pregnancy and 10-15% of women report symptoms of postpartum depression [15]. Hormonal changes occur during pregnancy may increase vulnerability for depression [16]. The highest rate of depression in women is between 25-44 ages that may be linked to maternal depression (antepartum and postpartum) [17]. Kheirabadi

GR and Maracy MR, reported that the prevalence of prenatal and postpartum depression in Iranian women were 22.8% and 20.1%, respectively [18]. It has been reported that depression can cause premature childbirth, fetal growth restriction and postnatal complications [15]. Prenatal depression is associated with high blood pressure, pre-eclampsia, and gestational diabetes [19]. Storksen HT et al., demonstrated that both anxiety and depression could increase the prevalence of FOC [20].

Furthermore, Molgora S et al., suggested that anxiety and couple adjustment predict FOC and clinical depression predict severe fear. Low levels of couple satisfaction increase probability and feeling of FOC [21]. However, other researchers emphasised that FOC is not linked to anxiety and depression. These results suggest that less research has been done on the correlation between FOC and depression [5]. Therefore, the present study was conducted with an aim to determine the predictors of fear of childbirth among pregnant Iranian women.

MATERIALS AND METHODS

This cross-sectional study was conducted on 230 Iranian primiparous pregnant women between 24 and 30 weeks of pregnancy, living in Ardabil, Iran. The study was conducted between February and December 2018.

The sample inclusion criteria were age between 18 to 35-year-old, primiparous women with a singleton pregnancy, not being at high risk for blood pressure and gestational diabetes, not having abnormalities of amniotic fluid and infertility history and having at least secondary school literacy. The pregnant women who had cardiovascular disorders, hepatic diseases, and unwanted pregnancy at the time of recruitment were excluded from the study.

The sample size was determined to be 192 women and it was determined using Strokzen HT et al., study results on FOC [20] considering a confidence interval of 95%, a precision (d) of 0.05 around the mean ($m=56.8$) and Standard Deviation ($SD=20.1$). Therefore, considering a 20% possible loss, the final sample size was estimated to be 230.

Sampling

Sampling was started after obtaining Ethics Code (code: IR.TBZMED.REC.1396.837) from the Ethics Committee of Tabriz University of Medical Sciences. Sampling was conducted through cluster method and among all health centres of Ardabil city, which has 17 centres, one-third of them were randomly selected using the website: www.random.org. Then, a list of pregnant women between 24 and 30 weeks of pregnancy covered by each centre was prepared using the Integrated Health System and they invited by a phone call to participate in the study. Then, the women were evaluated for inclusion and exclusion criteria. All the women who accepted to participate and signed the informed consent completed the questionnaires.

Measures

Participants completed the socio-demographic characteristics questionnaire, EPDS and WDEQ-A.

The socio-demographic characteristics questionnaire included about age, residence, marital status, spouse's age, level of education of women and her spouse, occupation of the women and her spouse, income etc.

In this study, the severity of childbirth fear was measured using the W-DEQ-A. WDEQ-A has been developed to measure the severity of FOC [22] and has been validated by Mortazavi F, in Iranian women samples [23]. It consisted of 33 items measuring stress and fear during the delivery. Each question was scored from 1 to 6 points. A score ≤ 37 was considered low fear, a score between 38 and 65 reported moderate fear and a score equal to or greater than 66 considered high fear and a score above 85 reported severe fear [24].

The EPDS was composed of 10 questions with a 0-30 total score for postpartum and prenatal depression [25]. This scale has been validated in Iran by Kani A et al., [26] and a score of 12 or more was considered as depression. Questions 1, 2, 4 are scored from 0 to 3 and questions 3, 5, 6, 7, 8, 9, 10 were scored from 3 to 0. [Appendix 1] shows the EPDS.

STATISTICAL ANALYSIS

Data were analysed using SPSS software version 23.0. Descriptive statistics including frequency, percentage, mean and standard deviation were used to describe the data related to the socio-demographic characteristics, FOC and depression. Normality of the quantitative data was measured by Skewness and Kurtosis tests. The Pearson's statistical test was used to determine the correlation between depression and FOC. The relationship between the socio-demographic characteristics and FOC was determined using independent t-test and one-way analysis of variance (ANOVA). Then, a General Linear Model (GLM) was used to control confounding variables and explaining variance and estimating the effect of each independent variable (socio-demographic characteristics and depression) on the dependent variable (FOC). The p-value of <0.05 was considered significant.

RESULTS

Among the 230 women in the present study, more than half of them (43.9%) were over 25-year-old and husbands of more than one-third of the women (37.8%) were in the age between 30 and 35-year-old. Almost half of the participants (46.1%) and their husbands (42.2%) had a university education level. The majority

of the participants (89.1%) were housewife. About two-thirds of the participants (68.3%) stated that the household income was somewhat sufficient. In more than half of the participants (56.5%), the gender of fetus was male. Most of the pregnant women (83%) have participated in prenatal childbirth education classes. About three-quarters of participants (71.1%) stated that they had received information about FOC from other sources which half of them (52.7%) had received this information from their friends. Most pregnant women (76.5%) stated that one of their relatives had childbirth in the last year and one-third of them (34.6%) had received experience from their relatives that vaginal delivery is scary and painful [Table/Fig-1].

The mean (standard deviation) of the FOC was 58.4 (26.1) from the available range of 0 to 165. The mean of the depression score was 8.9 (5.1) from the attainable score of 0 to 30. There was significantly positive correlation between depression and FOC scores based on Pearson's statistical test ($p<0.001$, $r=0.51$) [Table/Fig-2]. According to the scores of WDEQ-A, 23.0% of the pregnant women had mild fear, 35.7% of them had a moderate fear, 28.7% of them had high fear and 12.6% of them had severe fear [Table/Fig-3].

Based on independent t-test and one-way ANOVA, there was a statistical significant relationship between income and gender of the fetus with FOC ($p<0.05$) [Table/Fig-1]. These variables with depression variable were entered into the GLM. The variables of depression, income and gender of the fetus have a statistically significant relationship with FOC and they explained 28.5% of the variance in FOC scores [Table/Fig-4].

DISCUSSION

The results of the present study showed that there is a significant positive correlation between depression and FOC among the primiparous pregnant women. Based on the general linear model, depression variables, non-male fetal gender and family income were predictors of the FOC.

In the present study, 22.1% of the pregnant women had mild fear, 34.2% of them had a moderate fear, 27.5% of them had high fears and 12.1% of them had severe fear. Various studies reported that women with anxiety disorders and depression are at risk of FOC. Similar to the present study results, Hall WA et al., reported a high level of anxiety and FOC in one-fourth of the pregnant women [5].

In our results, there was a positive significant correlation between prenatal depression and FOC. In a study by Strokzen HT et al., which done on 1642 pregnant women, they found that more than half (56.2%) of the women with FOC did not have anxiety or depression, but anxiety and depression increased the prevalence of FOC [20] which is similar to the present results. In another study, Molgora S et al., evaluated role of anxiety, depression and couple adjustment on FOC in 426 primiparous Italian pregnant women, they reported that anxiety and couple adjustment can predict FOC but depression cannot predict severe childbirth fear [21]. Few studies have been reported the relationship between prenatal depression and childbirth fear [20,21], but there are more studies on the relationship between postpartum depression and FOC [19,25].

The present study also showed that there was a significant relationship between fetal sex and FOC ($p=0.015$), hence, the women who had female fetus had more childbirth fear. In European countries, it found that FOC was reported by 11% of all women [27], but in Asian countries such as Iran and Yemen, score of childbirth fear was significantly higher in the pregnant women [23]. In accordance with our study, Kempe et al., reported FOC in women whose fetus was female. In Yemen, socio-cultural factors have an important role in triggering childbirth fear [28]. The present results may be explained by which male gender is more acceptable in most societies [29]. In most Asian and African countries, parents' happiness after childbirth is based on the gender of the child but in European and North American

Variable	Number (%)	Mean (SD)	p	Variable	Number (%)	Mean (SD)	p
Age			0.205 [†]	Husband age			0.876 [†]
20 and lower	47 (20.5)	58.25 (24.9)		<30	60 (48.8)	23.8 (8.4)	
21-25	82 (35.6)	62.32 (29.5)		30-35	79 (37.8)	24.3 (7.0)	
Higher than 25	101 (43.9)	55.4 (23.4)		35 and higher	61 (13.4)	24.3 (6.7)	
Education level			0.557 [†]	Husband's education level			0.794 [†]
Secondary school	14 (6.1)	63.14 (20.9)		Elementary	8 (3.5)	67.7 (26.8)	
High school	26 (11.3)	53.3 (27.3)		Secondary	20 (8.7)	57.9 (26.2)	
Diploma	84 (36.5)	60.5 (27.1)		High school	18 (7.8)	55.6 (20.4)	
University	106 (46.1)	57.5 (25.8)		Diploma	87 (37.8)	59.8 (26.2)	
Job			0.451 [†]	University	97 (42.2)	57.1 (27.1)	
Housewife	205 (89.1)	24.3 (7.4)		Husband's job			0.855 [†]
Employed	25 (10.9)	22.7 (6.1)		Unemployed	2 (0.9)	24.1 (7.3)	
Income			0.007 ^{**}	Worker	35 (15.2)	23.6 (5.9)	
Completely sufficient	46 (20)	22.8 (7.6)		Employed	36 (15.7)	23.7 (7.0)	
Somewhat sufficient	157 (68.3)	24.22 (7.0)		Shopkeeper	54 (23.5)	24.3 (8.0)	
Insufficient	27 (11.7)	27.20 (8.7)		Other	103 (44.8)		
Fetus gender			0.032 [†]	Recent childbirth in relatives			0.315 [†]
Female	100 (43.5)	62.6 (25.6)		Yes	176 (76.5)	57.5 (26.4)	
Male	130 (56.5)	55.2 (26.1)		No	54 (23.5)	61.5 (25.1)	
Satisfaction of fetus gender			0.163 [†]	Recent childbirth experiences			0.408 [†]
Yes	222 (96.5)	58 (25.8)		NVD is scary	62 (34.6)	58 (26.2)	
No	8 (3.5)	71.1 (32.9)		CS is scary	18 (10.1)	52.2 (26)	
Husband's satisfaction of fetus gender			0.073 [†]	Obtaining information from other sources			0.810 [†]
Yes	221 (96.1)	57.8 (26.1)		Yes	162 (71.1)	58.9 (26.2)	
No	9 (3.9)	73.7 (22.7)		No	66 (28.9)	57.9 (26.1)	
Prenatal education classes			0.502 [†]	Which sources			0.462 [†]
Yes	191 (83)	57.9 (25.8)		Health sources	4 (2.4)	48 (32.1)	
No	39 (17)	61 (27.9)		Lectures	11 (6.7)	52.3 (20.3)	
				Friends	87 (52.7)	61.5 (26.9)	
				Health workers	63 (38.2)	57 (25.1)	

[Table/Fig-1]: The relationship between socio-demographic characteristics and fear of childbirth (n=230).

*p<0.05 for relationship between socio-demographic characteristics and fear of childbirth scores.

[†]One-way ANOVA, [†]Independent t-test

Variable	Mean (SD)*	Obtainable score range	Obtained score range	Relationship with depression r (p)
Fear of childbirth	58.4 (26.1)	0 to 165	5 to 133	0.51 (<0.001)
Depression	8.9 (5.1)	0 to 30	0 to 23	

[Table/Fig-2]: The status of the fear of childbirth and depression and their relationship with each other (n=230).

*Standard deviation

Fear of childbirth	Frequency	Percentage (%)
Low (<37)	53	23.0
Moderate (38-65)	82	35.7
High (66-85)	62	28.7
Severe (>85)	29	12.6

[Table/Fig-3]: Severity of fear of childbirth in the pregnant primiparous women (n=230).

countries, there is no priority for child's gender. In Asia and Africa, boys are in clear superiority [30]. Sex preference is one of the cultural issues of countries including Iran. Iran is one of the most ethno-culturally diverse societies in the world including Turks, Fars, Kurds, Tats and Turkmans. In some ethnicity groups, boys have always been preferred over girls [31]. Thus, this may cause fear and worry in parturient mothers. As a result, gender equality must be promoted by countries.

The present results showed that there is a significant relationship between family income and FOC. Similar to the present finding, other studies also reported a significant relationship between family income and childbirth fear [32,33]. It seems that in low-income

Variable	B (CI 95%*)	p-value
Depression	2.6 (2.0 to 3.2)	<0.001
Sufficiency of income for living expenses		
Completely sufficient (Reference [†])	0	
Somewhat sufficient	5.5 (-5.4 to 16.4)	0.322
Insufficient	10.1 (1.0 to 19.2)	0.029
Fetus gender		
Male (Reference [†])	0	
Female	7.3 (1.4 to 13.1)	.015

[Table/Fig-4]: Predictors of fear of childbirth based on the General Linear Model (n=230).

*Confidence Interval

Adjusted R square=28.5%

[†]Reference category was considered as the comparison category. The coefficients show the difference between each category and the reference category.

families, there are fewer opportunities to carry out elective cesarean section [34]. Therefore, women with lower economic status report more fear because they cannot afford cesarean section and, therefore, are forced to choose vaginal delivery [33]. Also, financial worries may contribute to fear [24].

LIMITATION

The limitation of this study was that only primiparous women who referred to health centres of Ardabil city were included. Therefore, it may exclude multiparous women and women who live in the rural region, so it should be cautiously generalised.

CONCLUSION

The present finding showed that more than three-fourths of primiparous women suffer from moderate to severe level of FOC and depression may influence childbirth fear. Therefore, the identification of depressed pregnant women and medication or psychotherapy of them can eliminate symptoms of FOC and reduce unnecessary cesarean section.

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PARTICULARS OF CONTRIBUTORS:

1. MSc Student, Department of Midwifery, School of Nursing and Midwifery, Tabriz, East Azerbaijan, Iran.
2. Associate Professor, Faculty of Education and Psychology, Tabriz University, Tabriz, East Azerbaijan, Iran.
3. Assistant Professor, Faculty of Nursing and Midwifery, Department of Midwifery, Tabriz University of Medical Sciences, Tabriz, East Azerbaijan, Iran.
4. Assistant Professor, Faculty of Medicine, Ardabil University of Medical Sciences, Ardabil, Iran.
5. Department of Anatomy and Pathology, Ardabil University of Medical Sciences, Ardabil, Iran.
6. Associate Professor, Social Determinants of Health Research Centre, Faculty of Nursing and Midwifery, Tabriz, East Azerbaijan, Iran.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Mojgan Mirghafourvand,
Sough Sharaati Street, Tabriz, East Azerbaijan, Iran.
E-mail: mirghafourvand@gmail.com

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APPENDIX 1: EDINBURGH POSTNATAL DEPRESSION SCALE (EPDS)

In the past 7 days:

- | | |
|---|---|
| 1. I have been able to laugh and see the funny side of things
As much as I always could
Not quite so much now
Definitely not so much now
Not at all | 6. Things have been getting on top of me
Yes, most of the time I haven't been able to cope at all
Yes, sometimes I haven't been coping as well as usual
No, most of the time I have coped quite well
No, have been coping as well as ever |
| 2. I have looked forward with enjoyment to things
As much as I ever did
Rather less than I used to
Definitely less than I used to
Hardly at all | 7. I have been so unhappy that I have had difficulty sleeping
Yes, most of the time
Yes, sometimes
Not very often
No, not at all |
| 3. I have blamed myself for things necessarily when things went wrong
Yes, most of the time
Yes, some of the time
Not very often
No, never | 8. I have felt sad or miserable
Yes, most of the time
Yes, quite often
Not very often
No, not at all |
| 4. I have been anxious or worried for no good reason
No, not at all
Hardly ever
Yes, sometimes
Yes, very often | 9. I have been so unhappy that I have been crying
Yes, most of the time
Yes, quite often
Only occasionally
No, never |
| 5. I have felt scared or panicky for no very good reason
Yes, quite a lot
Yes, sometimes
No, not much
No, not at all | 10. The thought of harming myself has occurred to me
Yes, quite often
Sometimes
Hardly ever
Never |